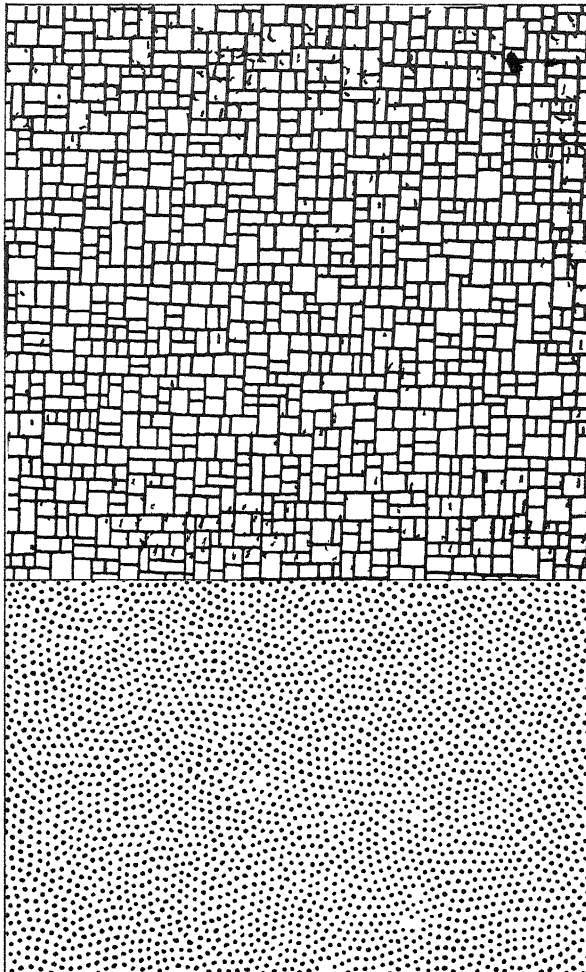


CHOOSING FLOORS



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Choosing Floors

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The best type of flooring for your home is the one that nearest meets your needs. Before making your choice, consider durability, maintenance, cost and beauty. A wide variety of attractive designs, textures and colors are available in the economy group of floorings as well as in the luxury price range.



Figure 1—This flooring effect was achieved by using two colors of sheet-form vinyl with decorator strips.

(Photo courtesy Armstrong Cork Co.)

Installing a new floor often transforms an uninteresting room into an attractive one. The information which follows may help you decide on the type of flooring that best suits you and your family.

MATERIALS ON THE MARKET

Whether you plan to build a new home, replace old floors, or give certain areas specific treatment, you have a lot of freedom in choosing materials.

Floors in natural wood finish, cork, linoleum, asphalt, vinyl, vinyl asbestos, rubber, seamless flooring and terrazzo are replacing old-type painted floors. Ceramic tile, marble tile, flagstone, slate and brick often fill needs for specific areas, such as bathrooms, family rooms, foyers, porches or patios.

Different Types, Shapes

Wood flooring may be the ever-popular hardwood strip or plank, hardwood block made of solid or laminated wood (thin sheets glued together) or soft-wood strip flooring.

The most commonly used types of tile include asphalt, vinyl asbestos, vinyl, rubber, cork and special linoleum.

Widely used sheet-form flooring materials include linoleum and vinyl.

A seamless flooring composed of vinyl color chips and a liquid-applied clear polyurethane base offers wall-to-wall seamless flooring.

Before making your choice, study the special qualities of each type of resilient flooring material. You can find such information in this publication.

WHAT DETERMINES CHOICE

Before finally deciding what you will buy, think about four main factors—cost, maintenance, amount of traffic the floor will receive and your personal preference. Other factors for you to consider are resistance to grease, resistance to alkali and moisture, resistance to indentation (pressure marks) and the type and condition of subfloors.

Cost

Price is affected by the quality and kinds of materials used, thickness of the product, and the complexity of producing the design or pattern. Usually the thicker the gauge, the higher the price. However, the type and quality of the backing used on sheet-form flooring helps to determine price. Flooring with felt backing (installed on suspended floors only) costs less than similar flooring with backing of mineral composition or foamed vinyl. Types with mineral composition or foamed vinyl backing are moisture- and

alkali-resistant and may be installed on slab or suspended floors. Costs for installation vary with the detail of the pattern and the local costs of labor and materials.

The initial price of the floor, the cost of installation and the number of years that the floor will give satisfactory service are the main items in figuring the cost of flooring.

Costs of various flooring materials vary with the manufacturer. However, linoleum tile in many colors and asphalt tile in dark colors are usually in the lower price range. They are followed in order by asphalt tile in light colors and linoleum and vinyl asbestos. Special linoleum tile and rubber tile are in the higher price range. These are followed by cork tile, seamless flooring, and vinyl.

Flooring products in the lowest price range include painted, enameled or surface-printed rugs or yard goods. These types are for temporary use and are simply placed over the floor instead of being installed for permanent use. Therefore, they will not be classified with other flooring materials discussed in this bulletin.

Maintenance

Upkeep is easier if flooring materials are non-absorbent, neutral in color, have a tough wearing surface and join the walls with a cove or curved edge instead of at right angles. Designs with uneven texture, patterns that are marbled, or those with a mixture of light and dark colors, show soil less than do solid colors.

Flooring materials easiest to care for are ceramic tile, terrazzo (if properly sealed), vinyl, vinyl asbestos, and seamless flooring. Linoleum rates next in ease of maintenance, followed by rubber tile, asphalt tile and cork tile.

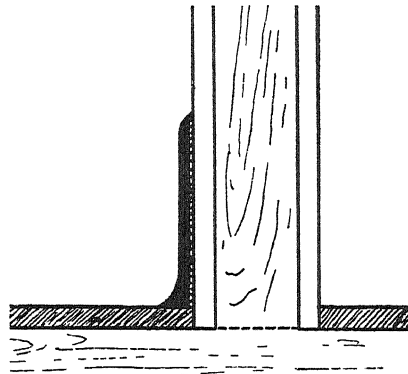


Figure 2—Cove or curved edge provides a neat, easily maintained joint where wall meets floor.

Heavy Traffic, Hard Wear

In rooms where your floor receives heavy traffic and hard wear, it is wise to select good quality flooring material that has pattern and color all the way through. The thickness or gauge and the type of backing used on the product, the condition of the subfloor and the type of maintenance the floor receives help to determine the life expectancy of the floor. New and improved

materials make it possible to use lighter gauges of some flooring materials. Study every area of the house with these points in mind in order to really know your flooring needs before you buy.

Personal Preference

Color, design, quietness under foot and sizes of tiles, strips and sheets, as well as the use for which the room is planned, will help you make a choice of flooring. Different types of tiles and yard goods are available in colors and patterns that resemble wood, brick, slate, travertine, marble, terrazzo, and random sizes of pebbles and chips. This makes it possible to use two or more different types of materials in your house and still have the floors appear as a unit.

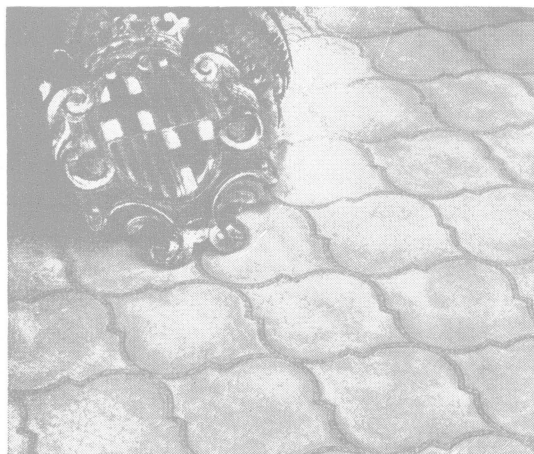


Figure 3—Vinyl in six-foot widths with foamed-vinyl cushion backing can be used anywhere in the house—from basement to attic. It is comfortable and quiet to walk on and easy to maintain. This is Persian Tile design.

(Photo courtesy Congoleum-Nairn, Inc.)

If less noise at point of impact or quietness under foot is important, you will select the sheet-type flooring material with foamed vinyl backing, cork, rubber, linoleum, vinyl or seamless flooring.

The foamed vinyl backing on sheet vinyl flooring contributes to greater resilience and more comfort underfoot. Choose materials according to where they will be used.

Resistance to Grease

Materials that have excellent resistance to grease are ceramic tile, vinyl, seamless flooring, and vinyl asbestos, according to manufacturers' research. Linoleum and special linoleum tile rate next, followed by grease-resistant asphalt and grease-resistant rubber tile. Regular cork tile and regular asphalt tile have less grease resistance.

Natural cork, like wood, is porous and absorbs grease. If cork tile is unfinished or if the finish is worn, it should be sealed with a penetrating floor seal. Sealing and (then) waxing help to prevent absorption of grease but do not always prevent spotting. Therefore,

cork tile is not recommended for kitchens. Cork with a vinyl finish is grease-resistant until the finish wears off.

Resistance to Alkali, Moisture

If your house is built on a concrete slab, moisture is lessened where the concrete slab is on well-drained ground, with proper depth of earth and gravel fill and a properly installed moisture barrier. Some type of recommended moisture-vapor barrier should definitely be placed underneath the concrete slab in order to prevent ground moisture from penetrating the concrete. The slab should be thoroughly cured before applying the finished floor. Moisture combines with alkaline salts in concrete. This results in an alkaline condition, which deteriorates the adhesive used in installing flooring.

Asphalt tile, vinyl asbestos and vinyl have excellent alkali resistance. Rubber and cork tile have fairly good resistance. Linoleum discolors and becomes brittle when subjected to alkalis.

The mineral composition or foamed vinyl backings which are now being used on some sheet vinyls are moisture- and alkali-resistant and may be installed on concrete slabs where proper precautions are taken.

If your house is built with pier construction or crawl space, the floor should be at least 18 inches above well-drained ground and cross ventilation should be provided. Since wood absorbs moisture, a double floor should be used under linoleum, sheet vinyl, plank style resilient floorings and the different types of tile.

Alkali damage can result also from using strong cleaning materials that are not properly removed by rinsing. The wrong type of cleaning material or failure to dry floors quickly can cause deterioration of flooring.

Indentation

Floor coverings which resist permanent indentation under large pressures are very difficult to produce. Follow manufacturer's recommendations on selection of flooring in regard to safe load limit. Some types of resilient flooring resist as much as 200 pounds per square inch of bearing surface, while others may resist only 25 pounds.

Since indentation of resilient floor coverings is a major problem, the use of proper type and size glider or the use of flat gliders or cup-type rests under legs of furniture is very important. The area of contact between the floor covering and the glider helps to determine the amount of pressure the floor receives. Flat gliders are recommended for heavy pieces of furniture such as sofas or beds.

Type, Condition of Subfloor

The life and serviceability of tiles and sheet flooring materials are greatly affected by the type and condition of the subfloor. Linoleum, asphalt tile, cork, rubber, vinyl asbestos and vinyl

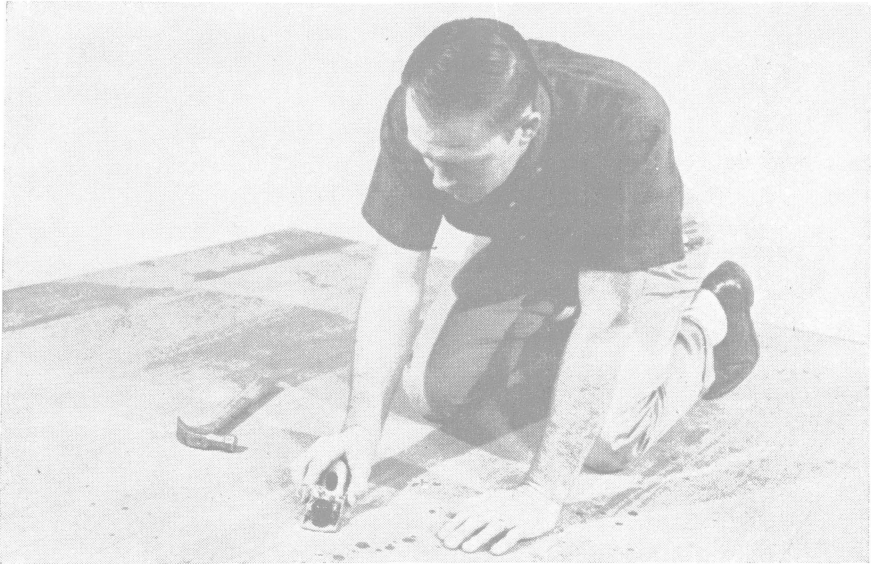


Figure 4—Before applying flooring materials over old, double wood floors, replace damaged boards, renail loose boards and plane or sand warped areas. Sanded areas should be properly filled with a recommended floor filler.

(Photo courtesy Armstrong Cork Co.)

show irregularities of the underflooring on which they are laid. High points in the flooring materials receive excessive wear. Besides, changes in moisture conditions and in temperature may cause splitting or cracking of floor coverings when subfloors expand or contract. Therefore, double floors or a single floor with proper type of underlayment are recommended. Underlayment is an additional layer of wood or wood product used over the subfloor and directly under the finished floor.

If you are repairing an old house, check the existing floor and foundation in order to be sure that it is structurally sound. It may need additional bridging or supporting joists or even a new foundation. Nail all boards down firmly.

The type and condition of the subfloor determines the kind of material to be used as underlayment. Hardboard and plywood underlayment are the usual types installed. Some types of particle board (or pressed wood) are used as underlayment. Regardless of

the kind of underlayment used, be sure that it is the type recommended for this purpose. The thickness of the underlayment depends on the condition of the subfloor. Special types of $1\frac{1}{8}$ -inch plywood serve the purpose of both subfloor and underlayment.



Figure 5—An underlayment of plywood or hardwood is advised for uneven sub-floors. This underlayment provides a sound base when laid over a tongue-and-groove floor.

(Photo courtesy Armstrong Cork Co.)

One of the most common problems in remodeling a house is the proper installation of an attractive and easily maintained floor. When new flooring is installed in an old house, the original wood floor is often used for underflooring. Be sure that this floor is firm and smooth, whether it is a single or double one.

Wood block or strip flooring can be placed directly over old single or double wood floors. Lining felt is used between the wood finish flooring and the wood subfloor to deaden noise.

SPECIAL QUALITIES OF MATERIALS

Asphalt Tile

The market carries a wide variety of attractive colors, textures and patterns in asphalt tile. It is brittle and requires a firm, smooth underflooring. Regular asphalt tile has the lowest initial cost. However, when the initial cost plus the cost of upkeep and maintenance is figured for the life span of the floor, asphalt tile may not be the lowest on a cost-per-year basis. Regular asphalt tile is less grease resistant than most other types of resilient floor-

ing. Some manufacturers make a grease-resistant asphalt tile. Check with a reliable dealer regarding special qualities. Asphalt tile is in the economy price range and may be installed on below-grade concrete floors. It is available in tiles of different sizes and is $\frac{1}{8}$ inch thick.

Linoleum and Linoleum Tile

Durable and easy-to-maintain, linoleum is grease-resistant. In



Figure 6—The colors of inlaid linoleum retain their beauty for the life of the floor because they go all the way through to the backing.

(Photo courtesy Armstrong Cork Co.)

better quality linoleum, coloring and patterns extend through to the backing. Cost and durability increase with thickness. Most linoleum is machine-pressed on a backing, which is usually of felt. This felt backing lasts longer where saturated with resins. Battleship linoleum has a finely woven burlap backing and is recommended for areas that receive heavy traffic.

Most sheet-form linoleum is made in 6-foot widths but some types are available in 2-foot widths. Some linoleum tile is available in 6- by 12-inch

tiles. However, most patterns are in 9- by 9-inch sizes. Tile and sheet form linoleum come in thicknesses of $\frac{3}{32}$ inch for normal home use, $\frac{5}{64}$ inch for light traffic and $\frac{1}{8}$ inch for heavy traffic.

Special Linoleum Tile

This is specially processed linoleum that has a dense, tough composition. Be careful not to confuse it with regular linoleum or linoleum tile. It has excellent resistance to indentation and abrasion and is a much tougher material than regular linoleum. It is recommended for areas that receive extra heavy traffic, since it is heavy gauge with no backing. Color goes all the way through

the tile. Special linoleum tile is $\frac{1}{8}$ inch thick and is available in 9- by 9-inch and 12- by 12-inch sizes.

Rubber Tile

Rubber tile is durable, has the ability to cushion footsteps and has a smooth, glossy surface. It is manufactured by a limited number of companies in plain colors and in marbled designs and colors. Rubber tile is usually more expensive than asphalt, vinyl asbestos tile or linoleum. It rates higher than other resilient floorings in skid resistance, but is harder to maintain than linoleum, vinyl or vinyl asbestos.

Tiles are 9, 12, and $27\frac{3}{4}$ inches square. One manufacturer also makes 36-inch wide rubber sheet flooring.

Vinyl-Asbestos Tile

Available in a variety of colors and patterns, vinyl-asbestos tile has excellent resistance to grease, alkalis and most solvents. It is durable, economical and easy to maintain. Vinyl asbestos dents more readily than pure vinyl and is less expensive than rubber, vinyl or cork tile.

It is available in 9- by 9-inch and 12- by 12-inch tiles in thicknesses of $\frac{1}{16}$ inch to $\frac{1}{8}$ inch.

Vinyl and Vinyl Tile

Sheet form vinyl and vinyl tile are flexible, are highly resistant to grease and solvents and do not harden with age. They are durable, comfortable underfoot, easy to maintain and resistant to harsh cleaners. Both forms of vinyl come in a variety of colors and patterns. Colors are clear and bright. Textures vary from satin smoothness to very rugged designs. Through use of color, design and texture, vinyl is made to resemble cork, wood, terrazzo, marble, flagstone, brick, pebbles and other materials.

Vinyl is available

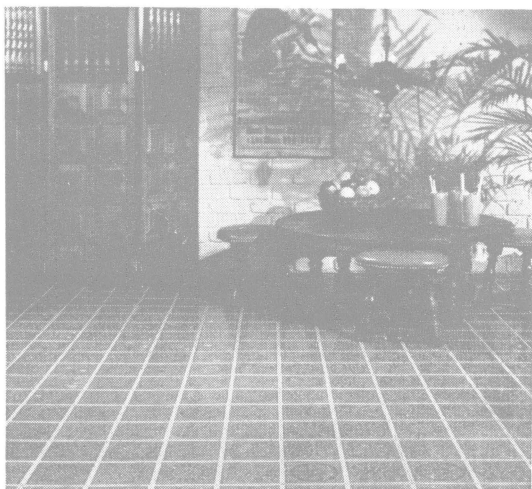


Figure 7—Primitive art inspires this modern tile design of ancient Mexico. It is made in 12- by 12-inch solid vinyl tiles.

(Photo courtesy Robbins Products, Inc.)

in rolls 6 feet wide, in many sizes of tiles and in strips which look like planks. Thickness of smooth unbacked vinyl varies from .080 inch to $\frac{1}{8}$ inch. Waffle back vinyl tile is $\frac{1}{4}$ inch thick and is available only in tile form.

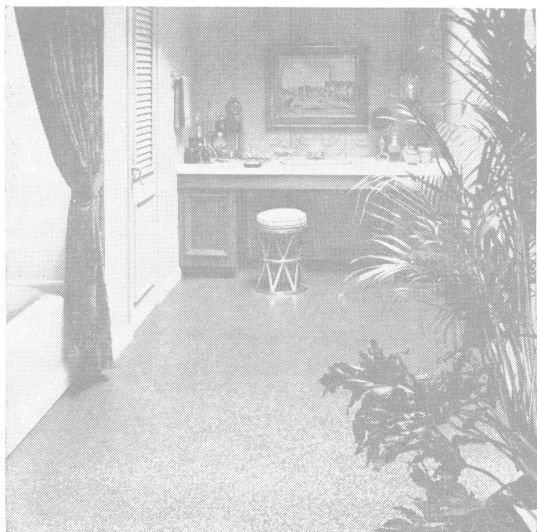


Figure 8—Vinyl in sheet form is easy to maintain. The moisture-resistant backing makes it suitable for installation on concrete slabs or suspended floors.

(Photo courtesy Robbins Products, Inc.)

Sheet or roll form vinyl is manufactured with three types of backing—felt, mineral composition and foamed vinyl. The type with felt backing is recommended for suspended floors only. The types with special backing of mineral composition or foamed vinyl are moisture- and alkali-resistant and are used on properly constructed concrete slabs in contact with the ground or on suspended floors. Thickness of the vinyl, type of backing, and the design help to determine the price.

Cork Tile

Light, medium and dark shades of cork tile are on the market. Cork tile has a high degree of sound absorption and is quiet and comfortable underfoot. Strong cleaners can make cork porous and brittle. Therefore, regular cork tile is not recommended for kitchens or areas that have heavy traffic. Since cork is less grease resistant than most resilient flooring, it should be kept properly waxed at all times. Cork is made in squares, rectangles and octagons and in thicknesses ranging from $\frac{1}{8}$ inch to $\frac{1}{2}$ inch.

Vinyl-Cork Tile

This has a layer of vinyl that is fused (melted and blended) on the upper surface of the cork. It is available in regular cork color, with clear vinyl finish and in random shades of teak, walnut, and other woods. The vinyl increases durability and resistance to dents and makes the cork grease- and alkali-resistant until the layer of vinyl wears off.

Seamless or Wall-to-wall Flooring

Available in a wide variety of colors and color combinations, this seamless flooring is composed of vinyl color chips and a clear liquid polyurethane binder. Different combinations of color chips can be arranged on your floor in the liquid glaze that solidifies into a tough-wearing surface. It is non-porous, resistant to most mild acids and alkalis and may be applied over wood or concrete sub-floors that have been properly prepared. Thickness varies with the number of coatings applied. This seamless flooring may be coved or curved up the wall or used vertically on stairs. It has high gloss retention and resists scuffs and stains.

Another type of seamless flooring is adaptable to a wide range of exterior applications. It may be used on patios, carports, or garages and around swimming pools. It can be applied over exterior grade plywood, concrete, or other properly prepared sub-flooring including metal.



Figure 9—Seamless flooring composed of vinyl color chips and a liquid glaze is manufactured right on the floor. It may be coved and also used as a wall covering.

(Photo courtesy Torginol of America, Inc.)

Ceramic Tile

Ceramic tile is a permanent, easily maintained flooring material. Floor tiles are available with semi-glazed or unglazed surfaces in a wide variety of colors and shapes. Ceramic tile does not dent and is unaffected by grease, alkali or bleaches. The size of the tile varies from $\frac{3}{4}$ inch to giant-size squares 12 by 12 inches and rectangles 12 by 16 inches. Ceramic tile may be used for floors in bathrooms, powder rooms, game rooms, family rooms, kitchens, entrance halls and in other areas of the house where floors receive excessive wear.

If you are a homemaker who does most of her own work, you may prefer to have a floor that provides greater comfort and quietness underfoot than ceramic tile gives.

Rubber cushioned ceramic tile, easy to maintain, reduces traffic noise. It is made of small ceramic tiles bonded into preformed pockets of a 9- x 9-inch rubber grid. It is installed with a special adhesive.

Outdoor Flooring

Hard-surface or vinyl outdoor flooring resists weather and indentation and can be applied to concrete patios, porches, and walkways. Available in 12- x 12-inch colored tiles with a textured design, it is recommended for installation outdoors directly over concrete only. Special care must be exercised during installation in order to have all joints evenly spaced with a 1/16-inch opening (for expansion) between all tiles.

Terrazzo and Terrazzo Tile

Made of a mixture of marble chips and Portland cement, different methods are used in laying conventional terrazzo floors. Thickness of the terrazzo topping varies with type of installation and size of marble chips used. Check with your contractor regarding the different types of terrazzo and methods of installation.

Terrazzo tiles in 12- by 12-inch sizes made of marble chips and a polyester resin, are available in a wide selection of marble-ized patterns. This same type of terrazzo can be poured in place like the conventional terrazzo.

Terrazzo is very serviceable and when properly installed and finished is extremely easy to maintain.

Marble

Marble gives long years of practically maintenance-free service in heavy traffic areas. It is noted for its utility and beauty. Marble tiles for floor areas are made in sizes 8 by 8 inches, 9 by 9 inches and 12 by 12 inches and in thicknesses of 1/2 to 7/8 inch. A wide range of colors is available.

Slate, Flagstone and Brick

These materials are becoming more and more popular for use in entrance halls and enclosed porches. You can give your house ultra-modern accents by using these in other rooms. Porous types should be sealed for easier maintenance. Use a durable, water- and acid-resistant sealer-finish which is manufactured especially for slate, flagstone and unsealed brick.

Wood

Hardwood, such as red and white oak, birch, beech, pecan, maple and others are on the market in strip- or plank-flooring.

They are available in different widths, lengths and thicknesses and can be bought prefinished or unfinished. Strip flooring is the most widely used and usually the most economical. It is available in both hardwoods and softwoods. Hardwood plank flooring is similar in pattern but comes in wider random widths.

Hardwood block flooring—made in a choice of oak, birch, walnut, cherry and other woods—is made in several sizes and thicknesses. It may be purchased prefinished or unfinished. Some types are laminated and waterproofed (made from one or more layers of wood bonded together with waterproof glue). Others are made from short lengths of solid, hardwood strip flooring that are bound together by embedded steel splines (thin strips of metal). Wood block tiles are also made from graded wood particles bonded together by synthetic resins. The 9-inch square tiles are made in $\frac{3}{8}$ - and $\frac{1}{4}$ -inch thicknesses.

Softwood strip flooring is generally made of pine or fir. Edge-grain (quartersawn) softwood is more durable than flatgrain (plainsawn) softwood. Edgegrain lumber shrinks and swells less in width than does flatgrain. It is less likely to warp and wears more evenly.

A penetrating floor sealer followed by wax is recommended for wood flooring that is not prefinished. Floor seal soaks into the wood and tends to toughen and harden it. This gives a preferred finish that leaves the wood as nearly natural in appearance as possible and a surface that is not easily injured and that can be reconditioned with little effort.

REMEMBER

The beauty and performance of your floor is determined by:
. the type and condition of the subfloor
. the kind and quality of flooring material used
. correct type of adhesive for type of flooring
. workmanship used during installation
. proper care and maintenance

ACKNOWLEDGEMENT

Credit for use of the pictures in this publication is given to Armstrong Cork Company, Congoleum-Nairn, Inc., Robbins Products, Inc., and Torginol of America, Inc.

Choose floors that are...

A t t r a c t i v e

D u r a b l e

E a s y t o m a i n t a i n